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ABSTRACT

Two studies suggested that measures of parenting behavior should be differentiated according to source of information (maternal report, interviewer rating) and the context (naturally occurring situation, structured situation). Study 1 used data from an interview portion of the JOBS Child Outcomes Study, whereby mothers and interviewers documented their perceptions of maternal behavior in interaction with their preschool children. This subset of data documented the family circumstances of 790 low-income single African American mothers of preschool children. In the current analysis, the interviewer ratings and maternal reports were used to construct parenting indices in order to compare the two measures and their relative importance in stimulation, maternal warmth, and discipline. Measures were also taken of child development in receptive language abilities and personal maturity. Results indicated that interviewer report of maternal warmth seemed to be particularly important in predicting child development. Study 2 used data from the Infant Health and Development Program, and compared measures of spontaneous parent behavior to measures of parent behavior elicited in a structured setting. Interviews using a modified HOME inventory test with 486 white and African American families comprised the structured component. The videotaped spontaneous setting was a problem-solving task for the child which required the mother's assistance. This comparison found that predictions about child development varied with the context of the measures used, and the variance was different for each racial group. (Nine tables detail survey questions and statistical analyses of data. Contains 29 references.) (DW)

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Differentiating Among Measures of Parenting Behavior In Two Studies of Mothers and Their Preschoolers: The Role of Informant and Context

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Abstract

Although many measures of parenting behavior exist, little attention has been given to differentiating among the various measures. This paper draws on data from two large-scale investigations of mothers with preschool-age children to examine measures of parenting behavior that vary according to informant and context, in two racial groups. Both studies examine the association between measures of the socioemotional and cognitive aspects of parenting, and the linkages between these measures and child outcomes. In Study 1, data from the JOBS Child Outcomes Study are used to contrast mother and interviewer as informants. Results for this African-American sample suggest that while interviewers and mothers did not agree closely as informants regarding the mother-child relationship, both sources of information explain significant portions of variance in child outcomes. Interviewer reports appear to be particularly important in documenting maternal warmth. In Study 2, data from the Infant Health and Development Program are used to contrast measures of naturally-occurring parenting behaviors (measured with the HOME scale) with measures of parenting behavior elicited in a structured context. Measures based on the differing contexts were moderately correlated. For whites, the HOME subscales were better predictors of child outcomes than were measures based on elicited behaviors. In contrast, for African-Americans, the HOME subscales were not consistently associated with child outcomes, and measures of maternal behavior in the structured context predicted child receptive language ability. The two studies suggest that measures of parenting behavior should be differentiated according to source of information (maternal report, interviewer rating) and the context (naturally-occurring situation, structured situation) in which parenting is measured. Further, such measures may be associated with child outcomes differently for families of different racial groups.

Differentiating Among Measures of Parenting Behavior

In Two Studies of Mothers and Their Preschoolers:

The Role of Informant and Context

Because of the central role played by parents in the socioemotional and cognitive development of children, many different measures of parenting have been developed. These measures can be divided into two basic types: those seeking to describe the attitudes and beliefs of parents, for example, on the appropriateness of particular child rearing strategies or beliefs about children's development; and those seeking to describe the actual behaviors engaged in by parents, for example, how often the mother reads to or praises her child. Both types of measures have been shown to predict to child outcomes.

Measures of parenting attitudes, as a group, have been subjected to great scrutiny. Researchers have examined in detail the roots of parental beliefs and attitudes (Goodnow, 1988; Miller, 1988). Further, they have sought to differentiate among these measures. For example, focusing only on those measures of parents' beliefs that concern children's cognitive development, Miller (1988) differentiated between beliefs about children's abilities and beliefs about developmental processes. There have also been careful reviews of the evidence on reliability and validity of differing subsets of parent attitude measures (Holden & Edwards, 1989; Miller, 1988).

In contrast, there is little work to parallel these efforts for the second major grouping of parenting measures, those focusing on parenting behavior. While researchers have been careful to describe the purposes and psychometric properties of individual measures, there has been little attempt to look across this group of measures in order to examine underlying assumptions or provide a further differentiation within this set.

The present paper is an attempt to move towards such a differentiation among measures of parenting behavior. In particular, we ask whether such measures should regularly be distinguished

according to the informant they rely on, and according to the context in which parenting behavior is sampled.

Data source or informant has emerged as a central issue in other literatures. Achenbach, McConaughy and Howell (1987), for example, reviewed over 100 studies in which multiple informants reported on the presence of behavior problems in the same children. These researchers conclude that a difference exists between "similar" informants, that is, informants with similar perspectives on a child (such as mother and father pairs), and "dissimilar" types of informants, who view the child in differing situations, (such as mothers and teachers). Their meta-analysis found mean correlations of .60 across those studies considering pairs of similar informants, but .28 for pairs of dissimilar informants, and .22 between children reporting on themselves and the reports of other informants. While the mean correlation even for dissimilar informants was statistically significant, clearly agreement was higher for pairs of similar informants. The researchers conclude that "assessment of most children must take account of variance in the situations and informants on which assessment depends" (Achenbach, McConaughy, *et al.*, 1987, p. 227), and that ideally research and clinical assessment should tap the perspectives of multiple informants.

Parallel empirical examination of the role of informant is needed regarding measures of parenting behavior. In particular, to what extent do pairs of informants reporting on behavior within the same parent-child dyad agree? Do dissimilar informants on the same parent-child relationship each provide information that is important in predicting the developmental status of the child? Such analyses would be particularly informative to researchers who must limit their data collection efforts to a particular data source. For example, what are the limitations of surveys restricted to maternal report measures of the mother-child relationship? To what extent do measures restricted to this data source provide a basis for prediction to child outcomes?

A second major issue in seeking to differentiate among measures of parenting behavior is the context in which behavior is sampled. Again we can seek insight from another literature in which this issue has been an explicit focus of attention. Researchers of child language have long noted that the ideal way in which to examine the characteristics and development of language is to sample large amounts of speech in naturally-occurring contexts. However the extremely intensive nature of recording, transcribing, and quantifying such speech drastically limits the sample sizes that are feasible to study in such analyses, with linguistic studies sometimes relying on data from a single child, or, in large samples, ten to twenty children (Bloom, 1993). Further, even large samples of naturally occurring speech may fail to detect important but infrequently occurring speech patterns, or permit a confident conclusion regarding the absence of such patterns (McNeill, 1970).

As a result, a second strategy for sampling speech emerged: "Instead of observing the spontaneous occurrences of particular grammatical features, one tries to evoke them" (McNeill, 1970, p. 1067). Such procedures to elicit speech have been used, for example, to explore children's knowledge of plurals, past-tense inflection of verbs, and negation.

Such research distinguishes the language children are capable of using (competence) from what they typically use (performance). Clearly such a distinction is relevant to the measurement of parenting behavior. Procedures have been developed that involve rating samples of ongoing spontaneous behavior, and others have been developed to rate samples of parental behavior elicited in structured situations. Whereas the first strategy holds the potential of documenting the frequency with which differing types of parenting behavior occur spontaneously, as in language studies, this strategy holds the risk of failing to document infrequent but important behavioral events. By contrast, structured observational contexts, for example those that present a challenging task to the child and document parental behavior in helping the child complete the task, seek to elicit specific parenting behaviors that can be rated by predetermined coding criteria. While providing information on the

ability of the parent to provide support or stimulation when challenged to do so, this approach carries the risk of providing a picture of parental behavior that does not reflect on the quality of everyday behavior.

A key question for the study of parenting behavior is that of the extent to which measures that tap the context of spontaneously occurring behavior agree with measures relying on contexts that elicit behavior. Further, it is important to ask whether behavior sampled in each of these differing contexts emerges as a predictor of child outcome measures, and whether one or the other type of measure is clearly superior as a predictor.

The present paper reports on two studies, the first addressing the issue of informant in measures of parenting behavior, and the second addressing the issue of context sampled in such measures. In Study 1, data from the JOBS Child Outcomes Study are used to contrast mother and interviewer as informants on the behavior of the mother with a preschool age child. In this study, both mothers and interviewers document their perceptions of maternal behavior from interactions occurring naturally in the home. In Study 2, data from the Infant Health and Development Program, also taken when children were preschool-aged, are used to contrast measures of maternal behavior derived from differing contexts. Specifically, measures of spontaneously occurring behavior in the home are contrasted with measures derived from a mother-child teaching task designed to elicit maternal behavior in a challenging context. Both Study 1 and Study 2 encompass measures from two key domains of parenting behavior: cognitive stimulation and emotional support (Bornstein, in press; Maccoby & Martin, 1983). The two studies are also consistent in that each looks at measures of child development in the cognitive as well as socioemotional domains.

Study 2 adds a further dimension to this work, in that it explores the role of different contexts in measures of parenting behavior for families of different racial backgrounds. Recent work by Bradley and colleagues (1989) and by Sugland and colleagues (1994) raises the possibility that

measures of parenting behavior may show differential patterns of prediction to child outcomes for Hispanic-American, African-American, and European-American families. In the present work, by analyzing data from the Infant Health and Development Program separately for European-American and African-American families, the possibility is explored that measures of parenting behavior derived from spontaneous versus elicited behavioral contexts may predict differentially to child outcomes for families of different racial backgrounds. Examination of this possibility is important to informing choice of measures of parenting behavior for study samples of different backgrounds.

STUDY 1

Method

Background: The Early In-Home Survey of the JOBS Child Outcomes Study

The JOBS Child Outcomes Study (COS) is a component of the larger national evaluation of the Federal Job Opportunities and Basic Skills (JOBS) Training Program, which was enacted in response to the Family Support Act of 1988. The JOBS program requires eligible welfare recipients to participate in educational or job search activities in order to enhance their economic self-sufficiency. Although services are directed at adults, the JOBS program also provides child care and Medicaid benefits. The evaluation of the impacts of JOBS on adults' employment, education, and economic status is being conducted by Manpower Demonstration Research Corporation (MDRC; see Hamilton and Brock, 1994 for more information on the JOBS program and evaluation), while the evaluation of the effects of JOBS on children, the COS, is being conducted by Child Trends, Inc. under subcontract to MDRC (see Moore et al., 1995, for more information on the COS).

The Early In-Home (EIH) Survey represents the first data collection activity within the JOBS COS, and was designed to provide a detailed picture of the family circumstances and development of a subset of the JOBS children soon after their mothers' mandatory enrollment in the JOBS program. The EIH Survey was conducted in Fulton County, Georgia, among 790 mothers who had been

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randomly assigned to either the control or experimental group of the JOBS Evaluation between March 1992 and June 1993. All mothers in this sample had a child between three and five years of age at the time of random assignment[1]. Because women with children under three were exempt from the JOBS program at this site, the focal child was almost always the mother's youngest child. The 90-minute in-home interviews were conducted an average of three months after random assignment and included a survey of the mother's educational and employment history and work-related attitudes; household composition; mother's psychological well-being; the child's experiences in non-maternal care; child emotional and behavioral development; parenting and the home environment; and maternal and child health. The EIH Survey also included direct assessments of the child's cognitive development, and interviewer observations of the home environment (described below). All interviewers for the EIH Survey were African-American women.

Sample

Because the EIH sample is predominantly African-American (96%), these analyses were conducted with African-Americans only. Relevant data for the present analyses were available for 691 mothers and their children from the EIH sample[2]. All of the mothers had either applied for or were receiving AFDC, and 82% of the mothers had received AFDC for a total of two or more years prior to random assignment. The Fulton County, GA, site of the JOBS Evaluation excluded teenage mothers. Thus, although some of the mothers had given birth as teenagers, all were 20 years of age or older at the time of enrollment in the JOBS Evaluation. The mothers were almost entirely unmarried (99%). Thirty-five percent of the mothers had not finished high school, and 58% had completed high school

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[1] If there was more than one child in this age range in a family, one was randomly selected to be the focal child for the study.

[2] Families were included in these analyses who were African-American and who have complete data for maternal and child characteristics, the measures of the mother-child relationship considered here, and at least one of the two measures of child development considered here.

but not gone to college. Children, 49% of whom were male, ranged in age from 37 to 76 months, with a mean age of 56 months (see Table 1 for a complete description of the EIH sample).

Measures

Background/Sociodemographic Variables

Background variables included characteristics of the children (birthweight, age, and gender) and characteristics of the mothers (age and whether or not she had a high school diploma or GED only, or some college).

Measures of Parenting Behavior

The short form of the HOME Inventory, or HOME-SF, was adapted from the original HOME Inventory (Caldwell & Bradley, 1984) for use in the National Longitudinal Survey of Youth-Child Supplement (Baker & Mott, 1989). The early childhood version of the HOME-SF consists of 26 items, 15 of which are based on maternal report, and 11 of which are completed by the interviewer based on observations of the home environment and mother-child interaction. Researchers have widely relied on two global subscales derived from the HOME-SF: one focusing on Emotional Support in the home and one focusing on Cognitive Stimulation.

The EIH survey incorporated all items from the HOME-SF for early childhood, and introduced a set of new items to address a series of concerns about the use of the HOME-SF with a very low income and minority sample. In the present analyses we will report on indices that we developed for the EIH that incorporate HOME-SF and new items.

In developing the EIH parenting measures, our first concern was the material basis for many of the cognitive stimulation items in the HOME-SF (e.g., possession of books, record player or tape recorder). Given the low-income nature of our sample and many other populations of concern to researchers and policymakers, we sought to develop a set of new items describing cognitively stimulating interactions between mothers and preschoolers that were not centered on possessions.

Second, we were concerned about the lack of a clear underlying construct within the Emotional Support subscale of the HOME-SF. This subscale attempts to capture aspects of the parent-child relationship as diverse and perhaps as unrelated as television viewing, frequency of eating with the father, expression of positive affect toward the child, and physical punishment of the child. Indeed, Baker and Mott (1989) report that the internal consistency of the HOME-SF Emotional Support Subscale is only .47 for preschoolers. In developing parenting measures for the EIH survey, we attempted to differentiate two distinct aspects of emotional support (which had been differentiated in the subscales of the full HOME Inventory): warmth in the mother-child relationship, and discipline. In addition, we extended the discipline construct beyond the issue of physical punishment to encompass consistency in discipline, use of reasoning in discipline, expectations of obedience and expectations of emotional control in the child.

Finally, we felt that the HOME-SF relied heavily on interviewer ratings for those items documenting warmth in the mother-child relationship, but relied more evenly on interviewer ratings and maternal report to document cognitive stimulation and behaviors related to physical punishment. That is, there appeared to be a confound between data source and domain of the parent-child relationship. In developing the EIH parenting indices, we sought to include a balance of interviewer ratings and maternal report for each of the chosen parenting constructs. Further, we were aware of no attempts to date to examine either the relationship between the maternal report and interviewer rating items in the HOME-SF, or to consider their relative importance in predicting to child outcomes. In order to permit careful examination of both of these issues for the EIH parenting measures, we developed separate summary scores for the interviewer rating items and the maternal report items within each construct.

In sum, in developing a modification of the HOME-SF for the EIH survey we differentiated three constructs: cognitive stimulation, maternal warmth, and discipline. Items within the cognitive

stimulation and discipline constructs addressed concerns we had about these areas in the HOME-SF. Further, for each construct we developed a separate index based solely on maternal report or interviewer rating items.

Table 2 lists the maternal report (MR) and interviewer rating (IR) items within the Cognitive Stimulation, Warmth, and Discipline indices and notes whether or not individual items are from the HOME-SF. As can be seen, for each construct the subscales are comprised more of new than of HOME-SF items. In order to provide analyses parallel to those to be reported for Study 2, the present report will focus on the Cognitive Stimulation and Warmth indices but not the Discipline indices. In order to create summary indices, the relevant individual items were standardized to a mean of 0 and a standard deviation of 1. For each respondent, a composite index was created if at least 75 percent of the items comprising the index were complete. The sum of the individual measures was then divided by the number of valid responses to give the mean for the valid items. Indices created in this way will be referred to as Cognitive Stimulation-MR, Cognitive Stimulation-IR, Warmth-MR, and Warmth-IR.

We examined the internal consistency of each of these indices by computing Cronbach's alpha. Cronbach's alpha was higher for the MR and IR versions of the Warmth index (.71 and .73 respectively) than for the MR and IR versions of the Cognitive Stimulation index (.67 and .53 respectively). With the exception of the Cognitive-IR index, all of the indices have internal consistencies in the moderate to high range. Although our further analyses will not focus on the Discipline indices, we note that in this instance, the MR version had acceptable internal consistency (.71) while the IR version did not (.31)[3].

Childhood Outcomes

[3] One possible explanation for the low reliability of the Discipline-IR index was that maternal disciplinary behaviors were observed very rarely during the interview.

Receptive Language Abilities. Children completed the Peabody Picture Vocabulary Test - Revised (PPVT-R; Dunn & Dunn, 1981). The PPVT-R is a widely used, standard assessment of receptive (hearing) language abilities that is also frequently used as a rough proxy for verbal intelligence. For this measure, the subject is administered up to 178 items, each of which consists of a set of four pictures, one of which must be identified (recognized). A single standardized score (with a mean of 100 and standard deviation of 15) is derived, with a higher score indicating a greater receptive vocabulary. Within the sample for Study 1, the mean score on the PPVT-R was 69.2 (s.d. = 15.4).

Personal Maturity. The Personal Maturity Scale (PMS) is a 14-item maternal report measure. The mother rates on a scale from 0 (my child is not at all like that) to 10 (my child is exactly like that) such items as "Doesn't concentrate, doesn't pay attention for long" and "Is loving and affectionate." Previous research with the PMS in the Beginning School Study (Alexander & Entwisle, 1988), a study of children's development from first grade forward, indicates that when completed by teachers the PMS is predictive of parent and child expectations of the child's academic achievement as well as year-end school grades, net of the child's performance on standardized tests. In the present analyses, summary scores on the PMS were computed to indicate mother's mean response on the 0 to 10 scale across all items, with higher numbers indicating greater maturity. Within the sample for Study 1, the mean score on the PMS was 7.42 (s.d. = 1.49).

Results

Correlations Between Maternal Report and Interviewer Rating Indices

To assess the degree of correspondence between the MR and IR indices, we examined Pearson correlations between the two indices within each construct. The correlation between the MR and IR indices for Cognitive Stimulation was significant but modest (r = .17, $p<.001$). For Warmth, the MR and IR indices were not significantly correlated (r =. 05, p=.17). These correlations suggest that

maternal report and interviewer ratings even within the two broad domains examined here tap different or only partially overlapping aspects of parenting.

The Predictive Power of the Parenting Behavior Measures

A series of hierarchical regression analyses were conducted to examine whether or not the parenting behavior measures explain variability in the childhood outcomes, above and beyond sociodemographic factors. We note that the measures of children's development were collected concurrently with the parenting measures rather than at a later time. Thus, these are concurrent predictions. In each regression equation, the following background variables were entered on the first step and treated as covariates: child's birthweight, child's age, child's gender, maternal age, and maternal education[4]. Subsequently, the MR score was entered into the equation followed by the IR score (see Tables 3 and 4).

As can be seen in Table 3, Cognitive Stimulation-MR was a significant predictor of both the PPVT-R and the PMS above and beyond background characteristics of the mother and child. There was a significant change in R-square from Model 1 to Model 2 for both child outcomes, and Cognitive Stimulation-MR accounted for about the same amount of variance in predicting both outcomes. In addition, in Model 3 we see that Cognitive Stimulation-IR is a significant predictor of each of the child outcomes above and beyond not only background characteristics, but also maternal reports of cognitive stimulation. Although the change in R-square from Model 2 to Model 3 is significant for both child outcomes, the magnitude of the change is small.

Table 4 presents parallel results for maternal Warmth as a predictor of the child outcomes. Results follow a similar pattern as for Cognitive Stimulation. Warmth as reported by the mother (Warmth-MR) is a significant predictor of both child outcomes net of background characteristics, and

[4] In regression analyses for both Study 1 and Study 2, maternal education was modelled with two dummy variables: one indicated mothers who had less than a high school education, the other indicated mothers who had completed high school but no college.

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there is a significant change in R-square from Model 1 to Model 2. Additionally, the interviewer rating index of warmth (Warmth-IR) is a significant predictor of child outcomes above and beyond both background characteristics and maternal report of warmth. Changes in R-square from Model 2 to Model 3 are significant for both child outcomes measures.

Despite these similarities, there are notable differences in the pattern of prediction to the child outcomes from the Cognitive Stimulation and Warmth measures. Table 3 shows that Cognitive Stimulation-MR accounts for somewhat more variance in both outcomes than does Cognitive Stimulation-IR. By contrast, Table 4 shows that Warmth-IR accounts for approximately the same amount of variance in the outcome measures as Warmth-MR. This difference suggests that, while both MR and IR measures of the mother-child relationship tap important sources of variance in child outcomes, the relative importance of the two varies depending on the aspect of mother-child relations examined. Specifically, interviewer report of maternal warmth seems to be particularly important in predicting child outcomes.

STUDY 2

Method

Background: The Infant Health and Development Program

The Infant Health and Development Program (IHDP) is an ongoing longitudinal, eight-site intervention study designed to evaluate the efficacy of early child development and family support services in reducing the prevalence of health and developmental problems in approximately 1000 low birthweight premature infants (IHDP, 1990). Eligible low birthweight premature infants were defined for this study as those who weighed no more than 2500 grams at birth, were 37 weeks or less post-conceptional age between January, 1985 and October, 1985 and were born in one of the eight participating medical institutions (University of Arkansas for Medical Sciences, Little Rock, AR; Albert Einstein College of Medicine of Yeshiva University, Bronx, NY; Harvard Medical School,

Boston, MA; University of Miami School of Medicine, Miami, FL; University of Pennsylvania, Philadelphia, PA; University of Texas Health Science Center at Dallas, Dallas, TX; University of Washington School of Medicine, Seattle, WA; Yale University School of Medicine, New Haven, CT). For those eligible infants, before being discharged from the hospital, consent was requested for random assignment to either the Intervention group or Follow-up Only group. Of the 1302 eligible participants, 274 (21%) would not consent to be randomized and 43 (3%) later withdrew prior to participation. This resulted in 985 infants upon whom the principal analyses have been conducted (Brooks-Gunn, Klebanov, Liaw & Spiker, 1993; Brooks-Gunn, McCarton et al., 1994; IHDP, 1990). One third of the sample was assigned to the "Intervention" group (n = 377) and two thirds to the "Follow-up Only" group (n = 608).

Regular assessments began when infants were 40 weeks and have continued into the children's eighth year. Over the first five years of the study, both Intervention and Follow-up Group participants were assessed at regular clinic visits. During each visit, growth measurements were taken, general demographic information was collected, and mothers were interviewed about their children's health. Cognitive assessments were made yearly until the end of the intervention and at age 5. Behavioral assessments were made at 2, 3, 4 and 5 years. Additionally, home visits were conducted at 1 and 3 years. In light of intervention group differences observed when children were 3, the present analyses include only the Follow-Up Only group.

Sample

For the IHDP Follow-Up Only group subjects, retention was high with 547 of the 608 (90%) participating in the 36-month assessment for at least one of the outcome measures under consideration. Of these participants, we selected the 204 white and 282 African-American participants; these 486 participants represent 88% of the total Follow-Up Only sample. Despite the fact that there were no

ethnic group differences in the rates of attrition between birth and 36 months, there were too few subjects of Hispanic-American heritage or of "Other" ethnicity to consider as a separate group.

One-half of the mothers in the sample analyzed here were single at the time of the 36-month interview, and approximately one-third (35%) were receiving AFDC payments. Thirty-five percent of the mothers had less than a high school degree, and 29% had completed high school but no college. Table 5 provides a description of the IHDP sample overall and separately for whites and African-Americans.

Measures

Background/Sociodemographic Measures

Background factors examined included characteristics of the study, characteristics of the children, and characteristics of the mothers. Characteristics of the study referred to the site in which the infants were born. Characteristics of the children included birthweight, gender, and neonatal health as assessed with the Neonatal Health Index (NHI: Scott, Bauer, Kraemer, & Tyson, 1989). The NHI is a composite index reflecting birthweight and length of hospital stay, which is standardized to a mean of 100 with higher scores indicating better neonatal health. Characteristics of the mothers consisted of age and education, categorized as in Study 1.

Measures of Parenting Behavior

For the IHDP analyses, measures of parenting behaviors are derived from two contexts: the full HOME scale, which combined maternal report with interviewer observations; and measures derived from videotaped problem-solving assessments. Within each context, we examine a measure of cognitive stimulation and a measure of emotional support.

Cognitive Stimulation: The HOME Learning Subscale. The standard 55-item early childhood version of the HOME Inventory was administered at the 36-month home visit. At all sites, within-site inter-rater reliability was maintained at 90% or better. The full HOME has been found to consist of

eight subscales: Learning Materials, Language Stimulation, Academic Stimulation, Variety, Physical Environment, Warmth and Acceptance, Modeling, and Acceptance/Punishment (Bradley et al., 1989). Previous analyses with IHDP data have identified four constructs within the HOME: Learning/Cognitive Stimulation, Warmth, Discipline, and Physical Environment (see e.g., Brooks-Gunn et al., 1994; Klebanov et al., 1994). The Learning/Cognitive Stimulation subscale is a composite of the Learning Materials, Language Stimulation, Academic Stimulation, and Variety subscales of the HOME Inventory. In the present analyses we will use the this Learning subscale. Internal consistency reliability (Cronbach's alpha) for the HOME Learning subscale was found to be .82 for the white group,.87 for the African-American group.

Emotional Support: The HOME Warmth Subscale. The standard HOME Warmth Subscale was used. Internal consistency reliability (alpha) for the white group was found to be .61 and for the African-American group was .66.

Cognitive Stimulation: Quality of Assistance in Problem-Solving. The 30-month clinic visit included a 10-minute videotaped problem-solving assessment conducted according to a standard protocol adapted from the work of Matas, Arend, and Sroufe (1978). The problem-solving assessment included three tasks, each of which required the child to retrieve a toy contained in a plexiglas apparatus. The first task was relatively easy and was used as a warm-up task, whereas the second and third tasks were expected to be moderately difficult for the child and to require the mother's assistance. The coding system for this assessment was developed by Sroufe, Matas, and Rosenberg (1980) and then adapted by Spiker and her colleagues (Crawley & Spiker, 1983; Spiker, Ferguson, & Brooks-Gunn, 1993). With regard to maternal cognitive stimulation, the coding system includes a "Quality of Assistance" scale, which measures the type and extent of help offered by the parent to the child. Inter-rater reliability, computed via the weighted Cohen's kappa coefficient for all (Intervention and Follow-up) IHDP mothers on 20% of the videotaped interactions was .70 (see Spiker et all, 1993,

for complete information on the computation of inter-rater reliabilities in this sample). Quality of Assistance has been found to relate to the quality of infant-parent attachment (e.g., Matas et al., 1978) which, in turn, has been found to relate to children's own task performance (Matas et al., 1978) as well as to other aspects of children's socioemotional functioning (see Bretherton, 1985, and Belsky & Cassidy, 1994 for reviews).

Emotional Support: Supportive Presence in Problem-Solving. In addition to Quality of Assistance, the coding system for the problem-solving assessment includes a "Supportive Presence" scale. The Supportive Presence scale taps the degree to which the parent provides emotional support to the child and facilitates a positive learning experience, no matter how difficult the task (Crawley & Spiker, 1983; Spiker et al., 1993). Inter-rater reliability, computed via the weighted Cohen's kappa coefficient for all (Intervention and Follow-up) IHDP mothers on 20% of the videotaped interactions was .75 (see Spiker et al., 1993). Like Quality of Assistance, Supportive Presence has been found to relate to infant-parent attachment quality (e.g., Matas et al., 1978).

Childhood Outcomes

Receptive Language Abilities. Similarly to the EIH Survey children, when IHDP children were 36 months old, they completed the Peabody Picture Vocabulary Test- Revised (PPVT-R; Dunn & Dunn, 1981). For whites, the mean PPVT-R score was 99.55 (s.d. = 16.11). For African-Americans, the mean PPVT-R score was 77.40 (s.d. = 14.39).

Behavior Problems. When IHDP children were 36 months old, their mothers completed the toddler version of the Child Behavior Checklist (CBCL; Achenbach, Edelbrock, & Howell, 1987; McConaughy & Achenbach, 1988), which assesses the prevalence of children's behavior problems. There are 99 CBCL items in response to which parents rate the frequency of children's current (within the past two months) behavior problems on a three-point scale. For the present study we used children's total CBCL scores, with higher scores indicating more mother-reported behavior problems.

For whites, the mean CBCL score was 43.52 (s.d. = 18.90) and for African-Americans, the mean CBCL score was 49.98 (s.d. = 21.24).

Results

Correlations Between Parallel Measures across Contexts

The two cognitive stimulation measures, the HOME Learning subscale and the Quality of Assistance scale, were significantly correlated for both the white and African-American groups, with correlations in the moderate to strong range (for whites, r=.37, p<.001; for African-Americans, r=.25, p<.001). The two emotional support measures, the HOME Warmth subscale and the Supportive Presence scale were also significantly correlated for each group, with correlations in the moderate range (for whites, r=.27, p<.001; for African-Americans, r=.22, p<.001).

The Predictive Power of the Parenting Behavior Measures

A series of hierarchical regression analyses were conducted to examine the individual and collective predictive power of the parenting behavior measures for childhood outcomes, above and beyond sociodemographic factors. Again, we note that these are concurrent associations. In each regression equation, the same background variables as in Study 1 were entered on the first step and treated as covariates; in addition, IHDP site and child's neonatal health were included as covariates. Subsequently, the HOME score was entered into the equation followed by the observational measure. White and African-American groups were examined separately in all analyses (see Tables 6-9).

In general, the cognitive stimulation measures accounted for more variance in both child outcomes than the emotional support measures. Both the cognitive stimulation and emotional support measures accounted for more variance in the child's receptive language abilities than in the child's behavior problems.

With regard to the cognitive stimulation measures, for both the child's receptive language abilities and the child's behavior problems, the HOME Learning subscale was a more powerful

predictor than the Quality of Assistance scale (see Tables 6 and 7) and was a significant predictor in each model. The pattern of results for the Quality of Assistance Scale differed for the two racial groups. For the white group, this scale did not contribute significantly to the child's PPVT-R or CBCL scores. However, for the African-American group, the Quality of Assistance scale did contribute significantly to the child's PPVT-R score, but not to the CBCL scores.

With regard to the emotional support measures, again, the pattern of results differed for the two racial groups (see Tables 8 and 9). For the white group, the HOME Warmth subscale contributed to the child's PPVT-R and CBCL scores, but the Supportive Presence scale did not. For the African-American group, the HOME Warmth Scale did not predict to either outcome measure. However, the Supportive Presence scale contributed strongly to the prediction of African-American children's PPVT-R but not their CBCL scores.

Summary and Discussion

The purpose of these analyses was to examine the role of multiple informants and differing contexts in measures of parenting behavior. Results suggest the usefulness of differentiating measures of parenting behavior according to both informant and context, and also point to differences in the prediction of child outcomes from such measures according to family racial background.

The results of Study 1 indicate that in the African-American EIH sample of the JOBS Child Outcomes Study, mothers and interviewers did not agree closely as informants regarding the mother-child relationship. Only the maternal and interviewer reports of cognitive stimulation were significantly correlated, and this correlation, while significant, was modest.

While mothers and interviewers appeared to have differing perspectives on the mother-child relationship, the ratings derived from maternal report and interviewer ratings were each important in explaining variation in the child outcomes considered. Maternal report measures of cognitive stimulation and warmth each predicted significantly to the cognitive and socioemotional child

outcomes above and beyond background characteristics of the child and family. However, interviewer report measures of cognitive stimulation and warmth also added significantly to the prediction of the child outcomes beyond background variables and maternal ratings.

Our conclusion, like that of Achenbach, McConaughy, and colleagues (1987) regarding correspondence between informants for child behavior problems, is that including multiple perspectives on the mother-child relationship has advantages over using maternal report alone. The maternal and interviewer ratings jointly explained more variance in the child outcomes. Research that must be restricted to maternal report measures alone will be relying on a perspective that clearly contributes to our understanding of child outcomes. Yet, particularly for the dimension of maternal warmth, the inclusion of the perspective of an interviewer appears to be an important addition.

Understanding of the role of the informant in the study of parenting behavior could be extended in a number of ways. First, following the approach reported on by Achenbach, McConaughy, and colleagues (1987), future research could contrast informants with "similar" and "dissimilar" perspectives on the mother-child relationship. For example, mothers, fathers and interviewers could each be asked to rate parenting behavior, and agreement between the two parents, who share similar perspectives on the parent-child relationship, could be contrasted with agreement between either parent and the interviewer, whose perspectives are more dissimilar.

In addition, work could extend the attempt to develop separate parent and interviewer indices for dimensions of parenting[5]. For example, further efforts could examine a broader range of parenting items, and could aim to increase the internal consistency of an interviewer-based measure of cognitive stimulation. Further insight is needed into the greater predictive power of an outside perspective on maternal warmth. Is it the case that mothers tend to rate their behavior as warm given

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[5] It is notable that such attempts within the EIH study did not succeed for an interviewer measure of maternal discipline. Data from later waves of the COS will be examined in a continuation of this line of work.

societal expectations of the maternal role; that the maternal report items on warmth are failing to tap important aspects of the relationship; or is it the case that interviewers who have visited many homes have a better comparative basis for making distinctions as to warmth? Finally, research is needed to examine of the role of different informants within samples of different cultural and racial backgrounds.

Study 2 yields strikingly different patterns for European-American and African-American families in the IHDP sample regarding the role of context in the measurement of parenting behavior. The HOME subscales, which rely on interviewer ratings and maternal report of ongoing behavior in the home, were consistently associated with child outcomes for whites, whereas the measures based on behaviors elicited in a structured context failed to predict significantly to the measures of children's development once the HOME subscales were taken into account. Thus, for white families, the context of importance for predicting to child outcomes was ongoing behavior in the home.

By contrast, the measures of parenting based on ongoing behavior in the home predicted less consistently to the child outcome measures for African-American families. The HOME Learning subscale was significantly associated with the child outcomes, whereas the HOME Warmth subscale was not. While the measures of maternal behavior from the elicited behavior context were not associated with child outcomes for white families, they did serve as significant predictors of child receptive language ability among African-American families even with background variables and the HOME subscales taken into account. In general, Study 2 provides indications that elicited maternal behavior is more important, and ongoing behavior in the home relatively less important, as a basis for predicting child outcomes for the African-American families in the IHDP sample.

Future work will need to explore the bases for these differing racial patterns. One possibility is that the presence of an interviewer in the home for completion of the HOME Inventory may be interpreted and reacted to differently in families from differing backgrounds, such that all of the HOME items may not be culturally equivalent. Perhaps in African-American families the presence of

the interviewer, especially one of differing socioeconomic or racial background, is perceived differently than in white families. In such circumstances, parenting behavior may be altered more markedly when the interviewer is present. By contrast, behavior in the context of a structured situation, one that presents specific tasks and challenges to a mother and child, could go further towards eliminating constraints on behavior among African-American mothers. Alternatively, the maternal report ratings of different population subgroups may be differentially vulnerable to social desirability or other response biases. Future work should seek to replicate the pattern of the differential importance of contexts in the prediction of child outcomes for white and black families, and to extend the research on context to families of other backgrounds. Explicit examination of the match between interviewer and family characteristics is also warranted.

Limitations of the present work are the following. First, both studies involve samples with limits to generalizability. Study 1 involved a low-income and minority sample; Study 2 involved a sample in which all children had been born low birthweight and premature. Second, both studies examined concurrent associations of parenting measures with child outcomes; additional longitudinal analyses with later waves of data would be informative. Third, neither study provided a complete disentanglement of informant and context. In Study 1, while maternal and interviewer ratings could be contrasted, and both were based on naturally occurring behavior in the home, mothers had access to far longer samples of ongoing behavior, and thus the contexts for the two informants also differed. In Study 2, while the context for parenting behavior differed, informants also differed, with the HOME ratings based on input from both mother and interviewer and the laboratory tasks rated entirely by an outside observer. Further work more clearly separating out informant and context is warranted. Finally, each study addressed a small set of parenting constructs. Examination of how informant and context operate for additional domains of parenting behavior, such as monitoring of the child's interactions with friends, would be an important addition.

Together, the results of Study 1 and Study 2, even with the noted limitations, suggest that measures of parenting behavior, even within a broad domain such as cognitive stimulation, should not be thought of as a single undifferentiated set. As has been found for measures of parenting attitudes and beliefs, there is a need for work clarifying the key distinctions among measures of parenting behavior, and providing guidance on the selection of differing subsets of measures for differing research purposes. The results of the present research indicate that, at the least, measures of parenting behavior need to be differentiated according to the identity of the informant and the behavioral context sampled.

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Table 1

Early In-Home (EIH) Survey: Description of Sample

Description of EIH Sample (N=691), African-American only	
Mothers' Marital Status: Percent Single (never married, separated, divorced or widowed)	99
Percent of Mothers Who Have Received AFDC for Less Than Two Years	18
Percent of Mothers Who Have Received AFDC for Two to Five Years	37
Mean Maternal Age in Years (Range = 20 to 47)	30 (5.3)
Mean Maternal Age in Years at Birth of First Child (Range = 14 to 42)	22 (4.9)
Percent of Mothers with Less Than High School Education	35
Percent of Mothers with High School Degree, No College	58
Mothers' Mean Number of Children Younger than 19 (Range = 1 to 6)	2.3 (1.1)
Mean Child Age in Months: (Range = 37 to 76)	56 (8.5)
Child Gender: Percent male	49
Mean Child Birthweight of Child in Grams (Range = 936 to 5273)	3151 (672)

SOURCE: Child Trends, Inc. calculations of the Early In-Home Survey.

NOTES: 1. All table values except Ns are based on weighted data.
2. Standard deviations are in parentheses.

Table 2

Early In-Home Survey: Items Included in Parenting Behavior Scales

ITEM DESCRIPTION	HOME or NEW item?
I. Cognitive Stimulation--Maternal Report (MR)	
About how often do you read stories to (CHILD)?	HOME
How often did you talk with (CHILD) about what s/he did that day?	NEW
During the past week, how often did you let (CHILD) help you prepare food...	NEW
How often do you do things with (CHILD) such as singing or playing games together?	NEW
In addition to reading stories in books, adults sometimes make up stories or fairy tales or tell stories about family members or about "olden times." How often in the past week did you do this with (CHILD)?	NEW
Could you tell me about any special talents, abilities, or interests that (CHILD) has? Code number of mentions	NEW
About how many children's books does your child have of his/her own?	HOME
About how many magazines does your family get regularly?	HOME
How often does any family member get a chance to take (CHILD) on any kind of outing--shopping, park, picnic, drive-in, and so on? Would you say...	HOME
How often has any family member taken or arranged to take (CHILD) to any type of museum--children's, scientific, art, historical, etc.--within the past year? Is it...	HOME
How often does (CHILD) go out with you to church for a service or for a church social event? Is it...	NEW
II. Cognitive Stimulation--Interviewer Report (IR)	
Mother conversed with (CHILD) at least twice.	HOME
Did Respondent explain to (CHILD) what was happening, what the interview was about, or who the interviewer was?	NEW
Mother introduced interviewer to (CHILD) by name.	HOME
Books, magazines, or newspapers were visible in the home.	NEW
III. Maternal Warmth--Maternal Report	
My child and I often have warm, close times together.	NEW
Most times I feel that my child likes me and wants to be near me.	NEW
Even when I'm in a bad mood, I show my child a lot of love.	NEW
I'm never to busy to joke and play around with my child.	NEW

IV. Maternal Warmth--Interviewer Report	
Mother's voice conveyed positive feeling about this (CHILD).	HOME
Mother showed warmth in tone when talking with child(ren).	NEW
Mother caressed, kissed, or hugged (CHILD) at least once.	HOME
Mother seemed to take pride and pleasure in child(ren).	NEW
Did respondent spontaneously praise (CHILD) for her/his behavior, helpfulness, looks or other positive qualities...	NEW
V. Discipline--Maternal Report	
Most children get angry at their parents from time to time. If your child got so angry that s/he hit you, what would you do?	HOME
Sometimes kids mind pretty well and sometimes they don't. Have you had to spank (CHILD) in the past week? About how many times in the past week?	HOME
I think children must learn early not to cry.	NEW
I teach my child to keep control of his or her feelings at all times.	NEW
If a mother never spanks her child, the child won't learn respect.	NEW
If we have to wait a good while to see a doctor, I expect my child to just sit quietly and wait.	NEW
When a parent asks a child to do something, the child should just do it without having to be told why.	NEW
I know I should always enforce my rules, but if I'm sad or tired, sometimes I let things go and other times I lose my temper.	NEW
It is sometimes necessary to discipline a child with a good, hard spanking.	NEW
Even if I say no to something, my child knows I'll change my mind if they ask enough times.	NEW
How often, if ever, have you had times when you lost control of your feelings and felt you might hurt (your child/one of your children)?	NEW
VI. Discipline--Interviewer Report	
Mother physically restricted or shook/grabbed (CHILD).	HOME
Mother slapped or spanked (CHILD) at least once.	HOME
Mother slapped or spanked any of her children other than the Focal child during the visit.	NEW
Did respondent scream or yell at (CHILD) in a harsh or hostile manner during the visit:	NEW

Table 3

Early In-Home Survey: Regression Analyses of Cognitive Stimulation Indices Predicting Children's Receptive Language Abilities (PPVT-R) and Personal Maturity (Standardized Betas)

Step in Regression	I	II	III
PPVT-R Standardized Score (N=677, Mean=69.15, s.d.=15.36)			
I. Sociodemographic Factors			
Child's Birthweight in Grams	.03	.02	.02
Maternal Age in Years	.00	.02	.01
Maternal Education: Less Than High School	-.33***	-.29***	-.27***
Maternal Education: High School Degree, No College	-.20**	-.19*	-.18*
Child's Gender (1=male)	-.08*	-.07*	-.08*
Child's Age in Months	.11**	.11**	.12**
II. EIH Cognitive Stimulation Index--Mother Report		.21***	.19***
III. EIH Cognitive Stimulation Index--Interviewer Report			.14***
R^2	.05***	.10***	.12***
Change in R^2	--	.04***	.02***
Personal Maturity Scale Mean Score (N=679, Mean=7.42, s.d.=1.49)			
I. Sociodemographic Factors			
Child's Birthweight in Grams	.05	.03	.03
Maternal Age in Years	.03	.05	.04
Maternal Education: Less Than High School	-.12	-.09	-.07
Maternal Education: High School Degree, No College	-.00	.01	.02
Child's Gender (1=male)	-.07#	-.06	-.06
Child's Age in Months	.02	.02	.02
II. EIH Cognitive Stimulation Index--Mother Report		.21***	.20***
III. EIH Cognitive Stimulation Index--Interviewer Report			.09*
R^2	.02*	.07***	.07***
Change in R^2	--	.04***	.01*

SOURCE: Child Trends, Inc. calculations of the Early In-Home Survey.

NOTES: 1. All table values except Ns are based on weighted data.
2. # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4

Early In-Home Survey: Regression Analyses of Maternal Warmth Indices Predicting Children's Receptive Language Abilities (PPVT-R) and Personal Maturity (Standardized Betas)

Step in Regression	I	II	III
PPVT-R Standardized Score (N=677, Mean=69.15, s.d.=15.36)			
I. Sociodemographic Factors			
Child's Birthweight in Grams	.03	.03	.03
Maternal Age in Years	.00	.00	.00
Maternal Education: Less Than High School	-.33***	-.33***	-.31***
Maternal Education: High School Degree, No College	-.20**	-.20**	-.19**
Child's Gender (1=male)	-.08*	-.09*	-.08*
Child's Age in Months	.11**	.12**	.13***
II. EIH Maternal Warmth Index--Mother Report		.11**	.10**
III. EIH Maternal Warmth Index--Interviewer Report			.13***
R^2	.05***	.07***	.08***
Change in R^2	--	.01**	.02***
Personal Maturity Scale Mean Score (N=679, Mean=7.42, s.d.=1.49)			
I. Sociodemographic Factors			
Child's Birthweight in Grams	.05	.05	.04
Maternal Age in Years	.03	.03	.03
Maternal Education: Less Than High School	-.12	-.12	-.09
Maternal Education: High School Degree, No College	.00	.00	.01
Child's Gender (1=male)	-.07#	-.08*	-.06#
Child's Age in Months	.02	.04	.04
II. EIH Maternal Warmth Index--Mother Report		.19***	.18***
III. EIH Maternal Warmth Index--Interviewer Report			.17***
R^2	.02*	.06***	.09***
Change in R^2	--	.04***	.03***

SOURCE: Child Trends, Inc. calculations of the Early In-Home Survey.

NOTES: 1. All table values except Ns are based on weighted data.
2. # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 5

Infant Health and Development Program (IHDP): Description of Sample

Description of IHDP Sample at 36 Months, Whites and African-Americans Only	Whites and African-Americans (n = 486)	Whites (n = 204)	African-Americans (n = 282)
Mothers' Marital Status: Percent Single (never married, separated, divorced, or widowed)	50%	17%	75%
Percent of Mothers Receiving AFDC	35%	13%	50%
Mean Maternal Age in Years at Birth of IHDP Child (Range = 14 to 43)	25 (6)	27 (6)	23 (6)
Percent of Mothers With Less Than High School Education	35%	20%	45%
Percent of Mothers With High School Degree, No College	29%	27%	31%
Number of Mother's Children Living in Household	2.13 (1.13)	1.89 (0.93)	2.30 (1.24)
Child Gender: Percent male	48%	49%	47%
Mean Child Birthweight in Grams (Range = 540 to 2500)	1784 (465)	1833 (433)	1750 (485)

SOURCE: Center for Young Children and Families, Teachers College, Columbia University, calculations of IHDP data.

NOTE: Standard deviations are in parentheses.

Table 6

Infant Health and Development Program (IHDP): Standardized Regression Coefficients in the Prediction of Children's Receptive Language Abilities (PPVT-R) from Maternal Cognitive Stimulation Measures

Whites (n = 145)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	.02	.02	.02
Child's Gender	.03	.03	.02
Neonatal Health Index	-.05	.02	.02
Maternal Age	.01	.03	.03
Maternal Education: Less Than High School	-.40***	-.15	-.15
Maternal Education: High School Degree, No College	-.15≠	.02	.01
II. HOME: Learning		.45***	.42***
III. Quality of Assistance			.09
R^2	.30***	.42***	.43***
Change in R^2	--	.12***	.01

African-Americans (n = 198)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	-.03	.00	.00
Child's Gender	-.04	-.08	-.07
Neonatal Health Index	.04	.06	.06
Maternal Age	.04	.06	.03
Maternal Education: Less Than High School	-.27**	-.06	-.07
Maternal Education: High School Degree, No College	-.15≠	-.01	-.01
II. HOME: Learning		.44***	.40***
III. Quality of Assistance			.14*
R^2	.17***	.31***	.33***
Change in R^2	--	.14***	.02*

SOURCE: Center for Young Children and Families, Teachers College, Columbia University, calculations of IHDP data.

NOTES: 1. IHDP site was also covaried (see Brooks-Gunn et al., 1994; IHDP, 1990).
2. ≠ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 7

Infant Health and Development Program (IHDP): Standardized Regression Coefficients in the Prediction of Children's Behavior Problems (CBCL) from Maternal Cognitive Stimulation Measures

Whites (n = 153)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	-.03	-.04	-.04
Child's Gender	-.10	-.12	-.11
Neonatal Health Index	.07	.01	.01
Maternal Age	.08	.08	.09
Maternal Education: Less Than High School	.30**	.07	.06
Maternal Education: High School Degree, No College	.34***	.16#	.17#
II. HOME: Learning		-.49***	-.47***
III. Quality of Assistance			-.05
R^2	.15*	.31***	.31***
Change in R^2	--	.15***	.00

African-Americans (n = 224)

Step in Regression	I	II	III
I.Sociodemographic Factors			
Child's Birthweight	.01	.00	.00
Child's Gender	-.13#	-.11#	-.11#
Neonatal Health Index	-.10	-.10	-.10
Maternal Age	-.07	-.08	-.09
Maternal Education: Less Than High School	.23*	.16	.16
Maternal Education: High School Degree, No College	.06	.02	.02
II. HOME: Learning		-.15*	-.16*
III. Quality of Assistance			.04
R^2	.13**	.15**	.15**
Change in R^2	--	.02*	.00

SOURCE: Center for Young Children and Families, Teachers College, Columbia University, calculations of IHDP data.

NOTES: 1. IHDP site was also covaried (see Brooks-Gunn et al., 1994; IHDP, 1990).
2. # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 8

Infant Health and Development Program (IHDP): Standardized Regression Coefficients in the Prediction of Children's Receptive Language Abilities (PPVT-R) from Maternal Emotional Support Measures

Whites (n = 147)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	.03	.03	.04
Child's Gender	.03	.04	.04
Neonatal Health Index	-.04	-.03	-.04
Maternal Age	.01	-.01	-.02
Maternal Education: Less Than High School	-.39***	-.36***	-.34***
Maternal Education: High School Degree, No College	-.14#	-.10	-.10
II. HOME: Warmth		.24***	.22**
III. Supportive Presence			.12
R^2	.30***	.36***	.37***
Change in R^2	--	.05***	.01

African-Americans (n = 199)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	-.03	-.02	.00
Child's Gender	-.04	-.05	-.04
Neonatal Health Index	.04	.04	.02
Maternal Age	.05	.04	.00
Maternal Education: Less Than High School	-.27**	-.24*	-.23*
Maternal Education: High School Degree, No College	-.16#	-.14	-.09
II. HOME: Warmth		.09	.04
III. Supportive Presence			.28***
R^2	.17***	.18***	.25***
Change in R^2	--	.01	.07***

SOURCE: Center for Young Children and Families, Teachers College, Columbia University, calculations of IHDP data.

NOTES: 1. IHDP site was also covaried (see Brooks-Gunn et al., 1994; IHDP, 1990).
2. # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 9

Infant Health and Development Program (IHDP): Standardized Regression Coefficients in the Prediction of Children's Behavior Problems (CBCL) from Maternal Emotional Support Measures

Whites (n = 155)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	-.03	-.03	-.03
Child's Gender	-.09	-.10	-.09
Neonatal Health Index	.07	.05	.05
Maternal Age	.08	.11	.12
Maternal Education: Less Than High School	.31**	.28**	.26**
Maternal Education: High School Degree. No College	.34***	.31***	.30***
II. HOME: Warmth		-.22**	.19*
III. Supportive Presence			-.13
R^2	.16*	.20**	.21**
Change in R^2	--	.04**	.01

African-Americans (n = 225)

Step in Regression	I	II	III
I. Sociodemographic Factors			
Child's Birthweight	.01	.01	.01
Child's Gender	-.12#	-.12#	-.13#
Neonatal Health Index	-.10	-.10	-.09
Maternal Age	-.07	-.07	-.06
Maternal Education: Less Than High School	.24*	.24*	.24*
Maternal Education: High School Degree. No College	.07	.07	.05
II. HOME: Warmth		.01	.02
III. Supportive Presence			-.09
R^2	.13*	.13*	.14*
Change in R^2	--	.00	.01

SOURCE: Center for Young Children and Families. Teachers College. Columbia University, calculations of IHDP data.

NOTES: 1. IHDP site was also covaried (see Brooks-Gunn et al., 1994; IHDP, 1990).
2. # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.